Consultation on Arrangements for Micro-Generation

CER/06/190

Airtricity Response

Introduction

Airtricity welcomes the opportunity to respond to the Commission's consultation on the important subject of micro-generation. Ireland needs more small-scale renewable and sustainable generation to reduce its National contribution to global climate change. Indeed the Government's "Power of One" campaign should provide a major impetus to the installation of domestic-scale micro-generation.

Recently we have had numerous contacts from individuals, concerned about the environment and who wish to install various types of small-scale renewable generation for their homes, but for whom the lack of any alternative to registering as a generator and participating in the Trading and Settlement Code has been a major deterrent. We would therefore be very keen to see the framework for micro-generation finalised as soon as possible and implemented without delay.

technical issues (section 2)

The most important requiring clarification in this section is Networks' proposal to "set a limit of 40% of the total installed micro-generation capacity on the existing low voltage substation". This definition is self-referential and therefore meaningless. We accept that some form of limit may be appropriate, but a limit defined as a fixed percentage of itself needs to be re-thought – it would prevent installation of any generation at a substation currently without micro-generation as 40% of zero is still zero. What are the issues? Is ESBNG concerned about voltage, harmonics, substation export or what? Different generation technologies will also influence the scale of impact that micro-generation will have on the network – PV tends to export very little energy at night, but wind may well do so.

Aside from total installed capacity, the capacity of individual installations ought also to be considered more carefully. On a domestic scale, wind turbines would mostly be rated in the range of 1 – 2 kW and photovoltaic installations would seldom be much larger; with the same effect on the network as switching a kettle or a storage heater on or off. Where the installed capacity at an MPRN is small in relation to the average site demand, its existence and the variability or otherwise of its output is equivalent to demand "noise" and should therefore be ignored; it is only offsetting demand at the substation.

Larger installations, in the 10-20 kW range described, will have more impact on the electrical system and may require some form of limit initially.

Any limit on connections must not allow ESBNG to force through blanket connection bans as happened when ESBNG applied the wholly unjustifiable wind ban; there must be an arbitration process that gives equal weight to the experience and expertise of independent design engineers.

Airtricity believes that a de-minimis capacity of micro-generation is required, below which no penetration limit should be applied. Recognising that larger generation units will have more material electrical impact on the system, we accept that some properly defined penetration limit may be appropriate. Where any limit exists, a fair process must be established to enable individual cases to challenge its application.

notification

The issue of notification is fully linked to the enforcement of penetration limits. ESBN needs to know where micro-generation is installed on its network, so the process of connection must be as painless and non-bureaucratic as possible for the customer, to avoid creating a perverse incentive for unauthorised (and possibly dangerous) micro-generation connection. The last thing a domestic customer wants is to purchase a micro-generation set from a superstore and then be told by Networks that they can't use it! We believe that de-minimis generation equipment should be treated in the same way as domestic wiring changes; fit and inform. However ESBNG needs to provide clear guidance on its website on the technical requirements for interconnecting generation of any scale to the network.

We believe that the use of type-approval is an appropriate method of equipment certification. Regulation is required to ensure clear labelling of any generation equipment sold over the counter, to ensure customers know exactly what they are buying. With telecoms deregulation in GB, customers were allowed to install their own handsets for the first time. Regulation required all handsets sold to carry a label showing either a green triangle for equipment that could be connected to the network, or a red dot for equipment that couldn't. This type of simplistic approach to providing point-of-sale information could help to ensure only compliant generation equipment is installed in Ireland – the issue of unapproved imports would also need to be considered.

We agree with the Commission that

- **the approach adopted for the installation of micro-generation equipment should ensure that timely information is provided to ESBN**
- **only type-approved equipment should be permitted to connect to the network**

We disagree with ESBN that "consent" is required in order for them to know the level of micro-generation penetration; an "inform" process is equally effective in providing information.

In line with our previous comments, we believe that

- **fitting of domestic-scale micro-generation should require installation by an approved installer, but on a "fit and inform" basis**
- **consent may be required larger generation, if the installation will impact the network, although any refusal should be open to challenge as we described earlier.**

informing ESBN

- **We agree with the Commission that ESBN's proposed approach is bureaucratic and largely unnecessary; it would also strongly incentivise non-compliant connections for domestic-scale installations.**
- **Prior consent should only be required for installations likely to have a materially adverse effect on operation of the network.**

- **Customers should always be required to provide an installation completion certificate that confirms installation has been carried out in accordance with the required standards for safe connection to the network.**
- **We believe that it should be up to equipment manufacturers to obtain type approval for their equipment,**
- **it would be reasonable for ESBN to maintain a complete list of approved equipment on its website, as an aid to potential purchasers.**

consenting

This section of the consultation repeats the confusing "40% of total installed micro-generation" wording and adds "an estate" and "area", which are similarly ill-defined concepts. Clarification should be provided on how multiple installations will be handled on an estate or in an area. Is it suggested that installations will be grouped to determine whether an equivalent 50kVA generator is being installed? Is it being suggested that the installation of equipment equivalent, in substation demand terms, to improving the level of home installation requires network studies and potential system reinforcement?

We believe the issue of fifty 1kVA generators being connected on a housing estate is no different whether the equipment is being installed by on builder or fifty individual owners; this scale of installation will almost entirely have the effect of reducing demand. On the other hand, three or four 11kVa units on a single site may well export regularly to the system. Consenting requirements should, as we have previously argued, should reflect the scale of installation behind each meter point, rather than the overall installed capacity within a substation area.

We believe that;

- **consenting should only be required for larger micro-generation installations that can have a material electrical impact on the system and not for domestic-scale installations,**
- **all generation equipment sold in Ireland should be required to include a standardised, large logo showing compliance with requirements for connection to the Network,**
- **retailers should only be allowed to sell compliant equipment, and**
- **all equipment should include information on the technical requirements for connection to the network, information to assist location of an approved installer and warnings as to the hazards of DIY/unapproved fitting – including information on civil and criminal penalties for causing injury to networks staff and others through non-compliance.**

fees

We disagree with the requirement to charge fees in all but the few cases where there is the possibility of material adverse system impact. For the vast majority of installations, ESBN should only require confirmation that a type-approved unit has been connected to an MPRN in accordance with the rules for connection. This is perfectly adequate to ensure that ESBN is able to maintain accurate records of where units are installed on the network; a general requirement for consenting and fees is more likely to result in unrecorded connections.

As the Commission indicated, in 2.3.1, that it favours an "inform and fit" approach to installation, it is not clear why fees are proposed, or how they would be collected.

We do not believe that ESB should charge fees for recording information provided to them. However, above a de-minimis level, where consent to generation connection may be necessary, a nominal fee would be appropriate.

We agree with the Commission that micro-generators should be exempt from the Levy Order.

metering & commercial issues (section 3)

We agree that the Commission's criteria for evaluation are appropriate.

payment

It is not clear why there should be any question as to who should be responsible for paying the customer for any exported energy; in line with normal market processes, we would have expected the customer to arrange the sale of surplus energy to whoever they choose. The wholesale market clearly cannot pay, unless the generator decides to become a participant. Networks does not trade in energy, so should not be expected to pay. Which leaves only suppliers as a class of entity licensed to trade in electricity.

metering

Customers benefit from micro-generation through a reduction in their rate of import – there may be a good argument for developing new standard settlement profiles for customers with certain generation technologies that contribute to a reduction of demand at peak times. However any power exports will generally take place during periods of low demand, when the value of energy is lower.

Without time-of-day metering, customers exporting power would generally be over-compensated if their consumption was metered net, although they would also be over-paying for their imported energy due to standard settlement profiles attributing too much demand to their daytime consumption and ESBN would receive a benefit through lower system losses. For small installations the two effects might cancel each other to a large extent, so there is an argument for the smallest installations to be metered net.

For customers wishing to receive payment for exports, there does not appear to be any alternative to the installation of QH metering. The market, both pre and post SEM operates on a half-hourly basis so, in the absence of output profiles for all micro-generation technologies, the only way in which the value of exported power can be attributed to a supplier is for the output to be metered in a manner that is compatible with market settlement processes.

We believe that;

- **customers having installations that are small capacity in relation to their demand, who do not wish to be paid explicitly for their exports, and/or who export only occasionally or minimally, should be fitted with standard meters from which the backstop has been removed,**
- **customers with larger installations, or those who wish to sell their surplus energy, should be fitted with interval metering with import/export channels**
- **developing profiles for numerous micro-generations technologies will be too time-consuming and expensive to provide value for money,**
- **smart metering will not produce market-compatible data,**
- **micro-generators are unlikely to wish to become participants in the SEM**

Summary

Whilst there are many useful points raised in this consultation, we regret that it has considered all micro-generation as technically equivalent (except for ESBN's proposed levying of fees). We believe that domestic-scale micro-generation is largely equivalent to normal demand variations and should therefore be considered as a different class of generation from that where exports may form a material proportion of production.

We agree with the need for type-approval for micro-generation equipment, but believe that it would be wrong to approach this in a manner that resulted in ESBN being a single point of failure in the event that a number of competing equipment suppliers entered the market.

Regulating the sale of generation equipment and making the installation process straightforward and non-bureaucratic offers the most likely route to the required high levels of compliance with connection and safety rules. There should be the presumption of a right to connect compliant equipment, with ESBN only being required to provide a consent function in cases where an individual installation will have a material impact on the electrical system.